

Marijuana Prevention on College Campuses in a Changing Environment

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Webinar for the Illinois Higher
Education Center for Alcohol, Other
Drug, and Violence Prevention
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Is this déjà vu?

DEPARTMENT OF THE INTERIOR
BUREAU OF REVENUE

PRESCRIPTION BLANK
NATIONAL PROHIBITION ACT

BOOK NO. **D333299** BLANK NO. **45** PERMIT NO. **3795**

Rx *Brandy OT*
700-112-00

DATE *July 18* 192*5*

FOR *Jas. S. Smith*
GIVEN FULL NAME OF PATIENT

1000 1st St.
STREET AND NO.

Phila Pa.
CITY STATE

FOR USE OF DRUGGIST OR PHARMACIST ONLY

PERMIT NO. *Pa-2246*

CANCELLED *July 18* 192*5*
DATE OF CANCELLATION

Alexander Cupert
GIVEN FULL NAME AS ON PERMIT

2101 N. 63rd
STREET AND NO.

Phila Pa.
CITY STATE

Alfred J. King M. D.
GIVEN FULL NAME

1000 1st St.
STREET AND NO.

Phila Pa.
CITY STATE

THIS PRESCRIPTION MUST NOT BE REFILLED

SEE REGULATIONS FOR PENALTIES IMPOSED

FORM NO. 4003 REVISED FEB. 1922

Infant's Relief



Visit Brian's Page of Antique Weirdness
<http://www.teleport.com/~gumball/weird.html>

You're Not Alone

United States



- Conditional
- Decriminalized
- DUID
- Hemp
- Legalization
- Mandatory
- Medical
- Tax Stamps

Select to show which states have these types of laws

More than just medical use



What is the legal environment?

- Changing
 - More states adding medical use
 - Two states with legal non-medical use
 - Substantial Federal crackdown on dispensaries
 - Gradual acceptance of medical benefits
 - Possible Federal legislation freeing states
- Staying the same
 - Drug Free Schools and Community Act

Already Decriminalized

California Example – An 18 Year Old

| Holding < 1 oz Marijuana | Holding a Can of Beer |
|--------------------------|------------------------------------|
| Infraction Citation | Misdemeanor |
| \$100 Fine (no record) | \$250 First Offense \$500 Second |
| DMV Action Unclear | Loss of Drivers License for 1 year |
| | |

Consequences: Youth Arrests for Marijuana down by 61% from 2010 - 2011

Motivation for “Card” persists



What do you think of the pot scene in California?

ADAM: It’s great.

KYLE: I just got my card, and I’m pretty amped about it. I feel like I just unlocked the treasures of Los Angeles.

ADAM: I need to get mine. I don’t know why I haven’t.

KYLE: It’s just the most amazing thing in the world to go into a fucking store and buy weed with your debit card. I was like ... I couldn’t believe it.

ADAM: I actually got caught with pot a few years ago, me and Blake. And so I had to do 10 Marijuana Anonymous classes, and I went to these

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--Hughes, M. (2012, July). Weekday Warriors. *High Times*, (No. 438), 27–28.

Varying Medical Marijuana Controls



Spectrum of controls

- California does not require patient registration, list of conditions based upon physician judgment.
- Arizona's new law more specific list of conditions, and requires patient registration.

FREE!

MOT Magazine

Premier Issue

Pick your condition

Conditions That Can Be Treated By Medical Marijuana



Bipolar Disorder
 Autism/Aspergers
 Anxiety Disorder
 Panic Disorder
 Agoraphobia
 Genital Herpes
 Herpetic infection
 AIDS Related Illness
 Post W.E. Ecephalitis
 Chemotherapy Convaless
 Shingles (Herpes Zoster)
 Radiation Therapy
 Viral B Hepatitis, chronic
 Viral C Hepatitis, chronic
 Other arthropod borne dis
 Lyme Disease
 Reiters Syndrome
 Post Polio Syndrome
 Malignant Melanoma
 Other Skin Cancer
 Prostate Cancer
 Testicular Cancer
 Adrenal Cortical Cancer
 Brain malignant tumor
 Glioblastoma Multiforme
 Cancer, site unspecified
 Lympho & reticular ca
 Myeloid leukemia
 Uterine cancer
 Lymphoma
 Graves Disease
 Acquired hypothyroidism
 Thyroiditis
 Diabetes Adult Onset
 Diabetes Insulin Depend.
 Diabetes Adult Onset Unctrl
 Diabetic Renal Disease
 Diabetic Ophthalmic Dis
 Diabetic Neuropathy
 Diabetic PeripheralVascD

Hypoglycemia(s)
 Lipomatosis
 Arthropathy, gout
 Mucopolysaccharoidosis
 Porphyria
 Amyloidosis
 Obesity, exogenous
 Obesity, morbid
 Autoimmune disease
 Hemophilia A
 Henoch-Schoelein Purpur
 Senile Dementia
 Delerium Tremens
 Schizophrenia(s)
 Schizoaffective Disorder
 Mania
 Major Depression, Sgl Epi
 Major Depression, Recurr
 Obsessive Compulsive Disorder
 Dysthymic Disorder
 Neurasthenia
 Writers' Cramp
 Impotence, Psychogenic
 Alcoholism
 Opiate Dependence
 Sedative Dependence
 Cocaine Dependence
 Amphetamine Depend
 Alcohol Abuse
 Tobacco Dependence
 Psychogenic Hyperhidrosi
 Psychogenic Pylorospas
 Psychogenic Dysuria
 Bruxism
 Stuttering
 Anorexia Nervosa
 Tic disorder unsp
 Tourette's Syndrome
 Persistent Insomnia
 Nightmares
 Bulimia
 Tension Headache

Psychogenic Pain
 Post Traumatic Stress Dis.
 Org. Mental Dis. hd Inj
 Post Concussion Syndrome
 Nonpsychotic Org Bra Dis.
 Brain Trauma
 Intermittent Explosive Dis
 Trichotillomania
 ADD w/o hyperactivity
 ADD w hyperactivity
 ADD other
 Psychogenic PAT
 Parkinsons Disease
 Huntingtons Disease
 Restless legs syndrome
 Friedreich's Ataxia
 Cerebellar Ataxia
 Spinal mm atrophy II
 Amyotrophic Lateral Sclero
 Other spinal cord disease
 Syringomyelia
 Reflex Sympath Dystroph
 Multiple Sclerosis
 Other CNS demyelinating
 Hemiparesis/plegia
 Cerebral Palsy
 Quadriplegia(s)
 Paraplegia(s)
 Paralysis, unspecified
 Epilepsy(les)
 Grand Mal Seizures
 Limbic Rage Syndrome
 Jacksonian Epilepsy
 Migraine(s)
 Migraine, Classical
 Cluster Headaches
 Compression of Brain
 Tic Doloroux
 Bell's palsy
 Thoracic Outlet Synd
 Carpal Tunnel Syndrome
 Mononeuritis lower limb

Charcot-Marie-Tooth
 Neuropathy
 Muscular dystrophies
 Macular Degeneration
 Glaucoma
 Dyslexic Amblyopia
 Color Blindness
 Conjunctivitis
 Drusen of Optic Nerve
 Optic neuritis
 Strabismus & other binoc
 Nystagmus, Congenital
 Meniere's Disease
 Tinnitus
 Hypertension
 Ischemic Heart Disease
 Angina pectoris
 Arteriosclerotic Heart Dis
 Cardiac conduction disord
 Paroxysmal Atrial Tach
 Post Cardiotomy Syndrom
 Raynaud's Disease
 Thromboangiitis Obliteran
 Polyarteritis Nodosa
 Acute Sinusitis
 Chronic Sinusitis
 Chronic Obst Pulmo Dis
 Emphysema
 Asthma, unspecified
 Pneumothorax, Spontaneo
 Pulmonary Fibrosis
 Cystic Fibrosis
 Dentofacial anomaly pain
 T.M.J Syndrome
 GastroEsophageal Rfx Dis
 Acute Gastritis
 Gastritis
 Peptic Ulcer/Dyspepsia
 Colitis, Ulcerative
 Pylorospasm Reflux
 Regional Enteri & Crohns
 Colitis
 Colon diverticulitis
 Constipation
 Irritable Bowel Synd.
 Dumping Sydr Post Sur
 Peritoneal pain

Hepatitis-non-viral
 Pancreatitis
 Nephritis/nephropathy
 Ureter spasm calculus
 Urethritis/Cystitis
 Prostatitis
 Epididymitis
 Testicular torsion
 Pelvic Inflammatory Dis
 Endometriosis
 Premenstrual Syndrome
 Pain, Vaginal
 Menopausal syndrome
 Sturge-Weber Disease
 Eczema
 Pemphigus
 Epidermolysis Bullosa
 Erythma Multiforma
 Rosacea
 Psoriatic Arthritis
 Psoriasis
 Pruritus, pruritic
 Atrophy Blanche
 Alopecia
 Lupus
 Scleroderma
 Dermatomyositis
 Eosinophilia-Myalgia Syn.
 Arthritis, Rheumatoid
 Felty's Syndrome
 Arthritis, Degenerative
 Arthritis, post traumatic
 Arthropathy, Degenerat
 Patellar chondromalacia
 Ankylosis
 Multiple joints pain
 Intervertebral Disk Disease
 L-S disk dis sciatic N irrit
 IVDD Cerv w Myelopathy
 Cervical Disk Disease
 Cervicobrachial Syndrome
 Lumbosacral Back Disease
 Spinal Stenosis
 Lower Back Pain
 Peripheral enthesopathies
 Tenosynovitis
 Dupuytens Contracture

Muscle Spasm
 Fibromyagia/Fibrositis
 Osgood-Schlatter
 Tietze's Syndrome
 Melorheostosis
 Spondylolisthesis
 Cerebral Aneurism
 Scoliosis
 Spina Bifida Occulta
 Osteogenesis imperfecta
 Ehlers Danlos Syndrom
 Nail patella syndrome
 Peutz-Jehgers Syndrme
 Mastocytosis
 Darier's Disease
 Marfan syndrome
 Sturge-Weber Eye Syn
 Insomnia
 Sleep Apnea
 Chronic Fatigue Synd
 Tremor/Invol Movements
 Myofacial Pain Syndrme
 Anorexia
 Hyperventilation
 Cough
 Hiccups
 Vomiting
 Nausea
 Diarrhea
 Pain, Ureter
 Cachexia
 Vertebral disloc unsp
 Whiplash
 Back Sprain
 Shoulder Injury Unsp
 Fore Arm/Wrist/Hand
 Hip, Knee, ankle
 & foot injury
 Motion Sickness
 Anaphylactic or Reaction
 Trachoria Growths



Issue 1, Sept 2010

The Medical User

- Reinerman et al (2011) – Survey of patients at medical marijuana assessment clinics.
 - Mostly male, white, 44 and under.
 - 27.1% had some college
 - Overrepresentation of Males African Americans, Native Americans, and Employed
 - Therapeutic Goals
 - Pain 82.6%
 - Improve sleep 70.7%
 - Relaxation 55.1%
 - Muscle Spasms 41.1%
 - Headaches 40.7%
 - Anxiety 37.8%
 - Appetite 37.7%
 - Nausea 27.7%
 - Top Three Diagnostic Codes:
 - Back/spine/neck pain
 - Sleep disorders
 - Anxiety/Depression

Reinerman, C., Nunberg, H., Lanthier, F., & Heddleston, T. (2011). Who are medical marijuana patients? Population characteristics from nine California assessment clinics. *Journal of Psychoactive Drugs*, 43(2), 128–135.

The Student Medical User

- Survey of 729 undergraduates

- 4.8% report some doctor recommended use of marijuana in past 12 months
- 3.5% report having a current valid recommendation

Past 12 Month Marijuana Smokers

- 11.4% have valid recommendation
- 33.3% 50+ smokers have valid recommendation

Card Holders

- 94.2% have had card for 3 or fewer years
- Of 19 students who reported medical reasons:
 - 86.9% for anxiety, PTSD, depression, insomnia or ADD
 - 50% Pain management or nausea
- 50% purchase marijuana weekly, 66.7% report smoking before noon, and 84.8% smoke daily or almost daily.
- 24% used alcohol concurrently with their marijuana the last time they smoked.
- 58.9% drove while under the influence of marijuana in the past month
- 60.8% began using marijuana at age 16 or younger.

Indirect Measure: Analysis of National Ads

- Sampled 100 of 335 ads placed in major weekly newspapers from all states with medical marijuana laws as of June 2010.
- Coded them using a variety of methods: Trained coders and Amazon Mechanical Turk
- Found three main themes:
 - Traditional medicine (15.6%)
 - Holistic/alternative medicine (30.8%)
 - Counterculture/recreation (16.8%)
 - Mixed (36.8%)
- Varies substantially by state.

CA Marijuana Advertising

Sexualized images
Happy Hour Specials

H+
PATIENTS ASSOCIATION

4 | .com
San Diego, CA, 92120
619.

**Your Leader In
Compassionately
Priced Medicine**

\$55
CAP
ON ALL
TOP SHELF
We
are your
One Stop
Shop

CLONES
CONCENTRATES
NEW MEMBER GIFTS
REFERRAL GIFTS
HAPPY HOUR 1-5 DAILY

Sat. Oct. 8th

\$25
1/8's
\$1 From Every
Donation Goes To
Susan G. Komen
CURE.

Limited Strains!
Limit 1 Per Member
WHILE SUPPLIES LAST
*Only 1 Discount Applies
Per Transaction*

GO G
(213)

Top Shelf Kushes

\$20-\$45 1/8ths
\$10-\$23 half 1/8ths

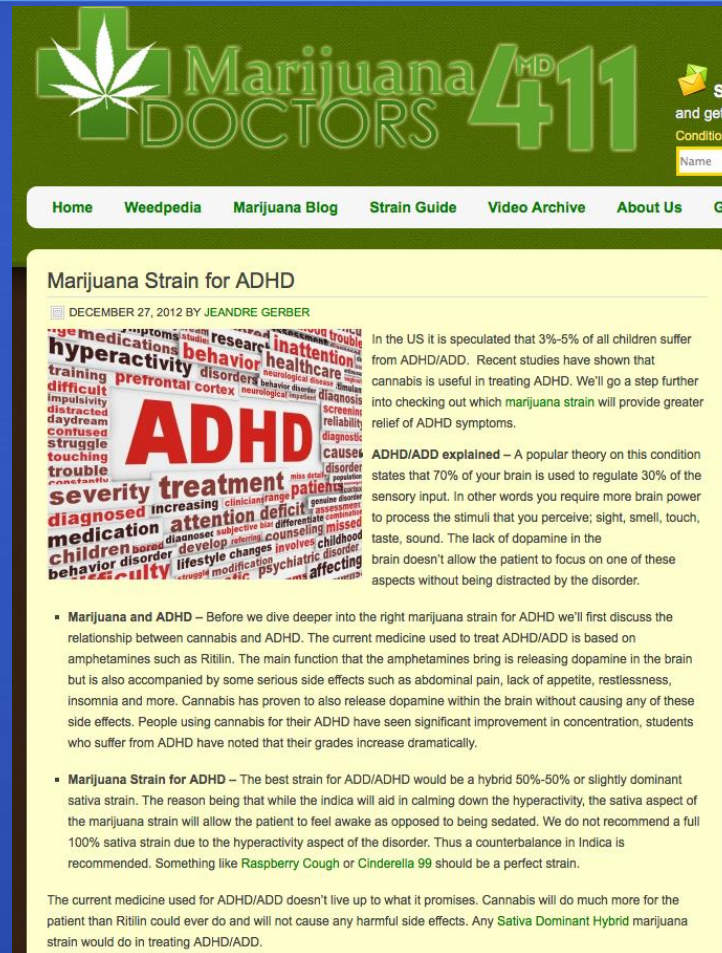
**No Ounce
over \$320**

OPEN DAILY
from 11am-9pm

We are located in Downtown LA
Directly off HWY 10
Free Private Parking

909-815@gmail.com

Not just newspaper ads



The screenshot shows the homepage of 'Marijuana Doctors 411'. The header features a green cannabis leaf logo and the text 'Marijuana DOCTORS 411'. A search bar is visible on the right. The navigation menu includes 'Home', 'Weedpedia', 'Marijuana Blog', 'Strain Guide', 'Video Archive', 'About Us', and 'Gre'. The main article is titled 'Marijuana Strain for ADHD' and is dated 'DECEMBER 27, 2012 BY JEANDRE GERBER'. The article content includes a word cloud on the left with terms like 'ADHD', 'hyperactivity', 'behavior', 'inattention', 'disorders', 'prefrontal cortex', 'neurological', 'diagnosis', 'reliability', 'diagnostic', 'cause', 'disorder', 'treatment', 'patients', 'medication', 'attention deficit', 'diagnosed', 'increasing', 'clinicians', 'range', 'assessment', 'children', 'based', 'develop', 'subjective', 'but', 'differentiate', 'missed', 'behavior', 'disorder', 'lifestyle', 'changes', 'involves', 'childhood', 'psychiatric', 'affecting', 'trouble', 'research', 'healthcare', 'neurological', 'disorder', 'screening', 'struggle', 'touching', 'trouble', 'impulsivity', 'distracted', 'daydream', 'confused', 'struggle', 'touching', 'trouble', 'severity', 'treatment', 'patients', 'diagnosed', 'increasing', 'clinicians', 'range', 'assessment', 'children', 'based', 'develop', 'subjective', 'but', 'differentiate', 'missed', 'behavior', 'disorder', 'lifestyle', 'changes', 'involves', 'childhood', 'psychiatric', 'affecting', 'trouble', 'research', 'healthcare', 'neurological', 'disorder', 'screening', 'struggle', 'touching', 'trouble', 'impulsivity', 'distracted', 'daydream', 'confused', 'struggle', 'touching', 'trouble'. The article text discusses the relationship between cannabis and ADHD, the current medicine used (Ritalin), and the best strain for ADHD (a hybrid 50%-50% or slightly dominant sativa strain).

Marijuana Strain for ADHD

DECEMBER 27, 2012 BY JEANDRE GERBER

In the US it is speculated that 3%-5% of all children suffer from ADHD/ADD. Recent studies have shown that cannabis is useful in treating ADHD. We'll go a step further into checking out which marijuana strain will provide greater relief of ADHD symptoms.

ADHD/ADD explained – A popular theory on this condition states that 70% of your brain is used to regulate 30% of the sensory input. In other words you require more brain power to process the stimuli that you perceive; sight, smell, touch, taste, sound. The lack of dopamine in the brain doesn't allow the patient to focus on one of these aspects without being distracted by the disorder.

- **Marijuana and ADHD** – Before we dive deeper into the right marijuana strain for ADHD we'll first discuss the relationship between cannabis and ADHD. The current medicine used to treat ADHD/ADD is based on amphetamines such as Ritalin. The main function that the amphetamines bring is releasing dopamine in the brain but is also accompanied by some serious side effects such as abdominal pain, lack of appetite, restlessness, insomnia and more. Cannabis has proven to also release dopamine within the brain without causing any of these side effects. People using cannabis for their ADHD have seen significant improvement in concentration, students who suffer from ADHD have noted that their grades increase dramatically.
- **Marijuana Strain for ADHD** – The best strain for ADD/ADHD would be a hybrid 50%-50% or slightly dominant sativa strain. The reason being that while the indica will aid in calming down the hyperactivity, the sativa aspect of the marijuana strain will allow the patient to feel awake as opposed to being sedated. We do not recommend a full 100% sativa strain due to the hyperactivity aspect of the disorder. Thus a counterbalance in Indica is recommended. Something like [Raspberry Cough](#) or [Cinderella 99](#) should be a perfect strain.

The current medicine used for ADHD/ADD doesn't live up to what it promises. Cannabis will do much more for the patient than Ritalin could ever do and will not cause any harmful side effects. Any [Sativa Dominant Hybrid](#) marijuana strain would do in treating ADHD/ADD.

Changing Environment: Advertising

Crackdown effects

- Dispensaries are just about gone
- Ads for Delivery Service persist
- Physician ads persist

Persisting questions

- College newspaper perspectives
- Are these ads reflective, persuasive, neither or both

Issues that complicate medical use:

Research Issues

- Definitions of medical vs. recreational use: The Viagra problem
- Determining “legitimate” recommendations
- Mixed use

Campus Policy Issues

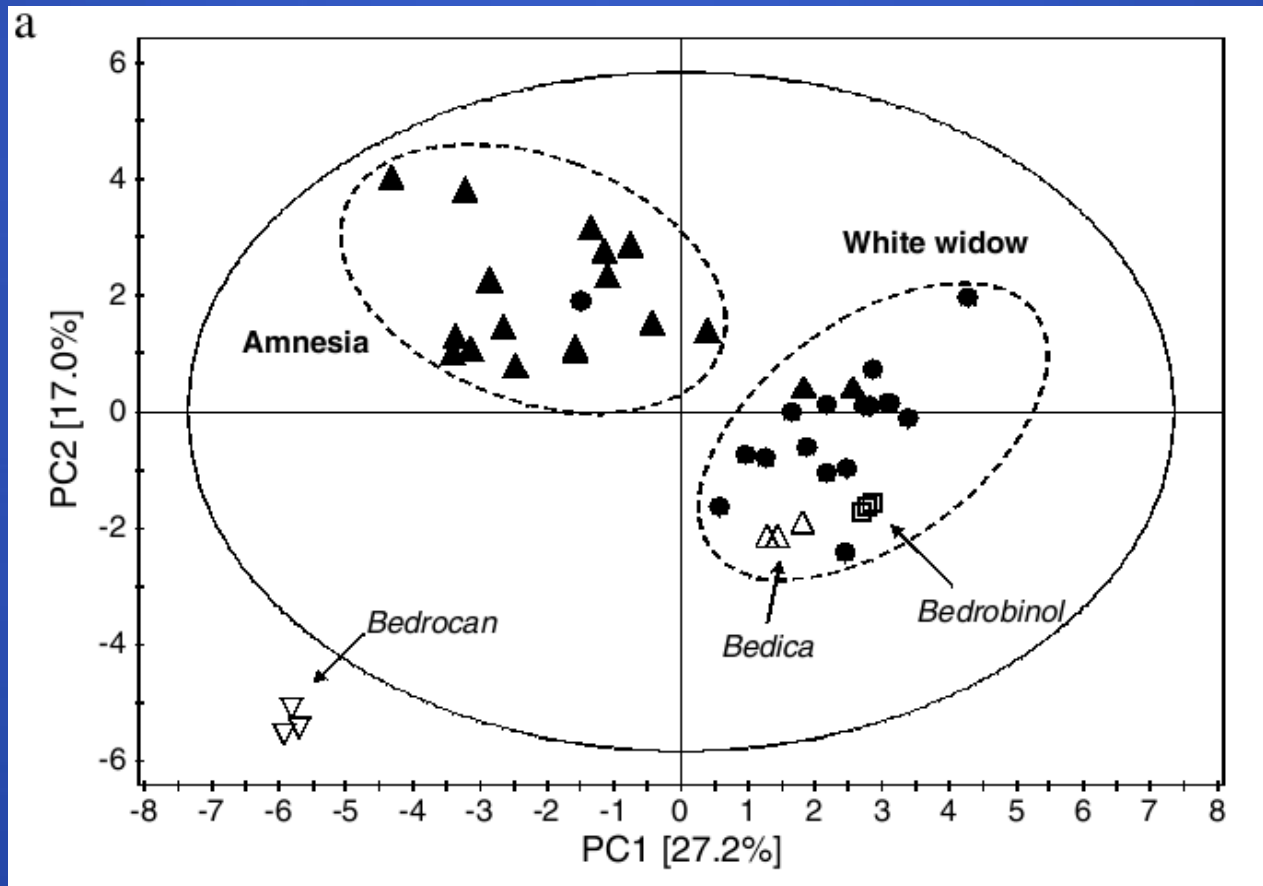
- Court decisions can change compliance requirements:
 - ADA-type concerns
 - Legislative actions both federal and state
 - NCAA testing

Standardization: Medical

“Cannabis as an herbal medicine poses serious challenges to modern medicine, which operates according to the ‘single compound, single target’ paradigm of pharmacology” (p. 660).

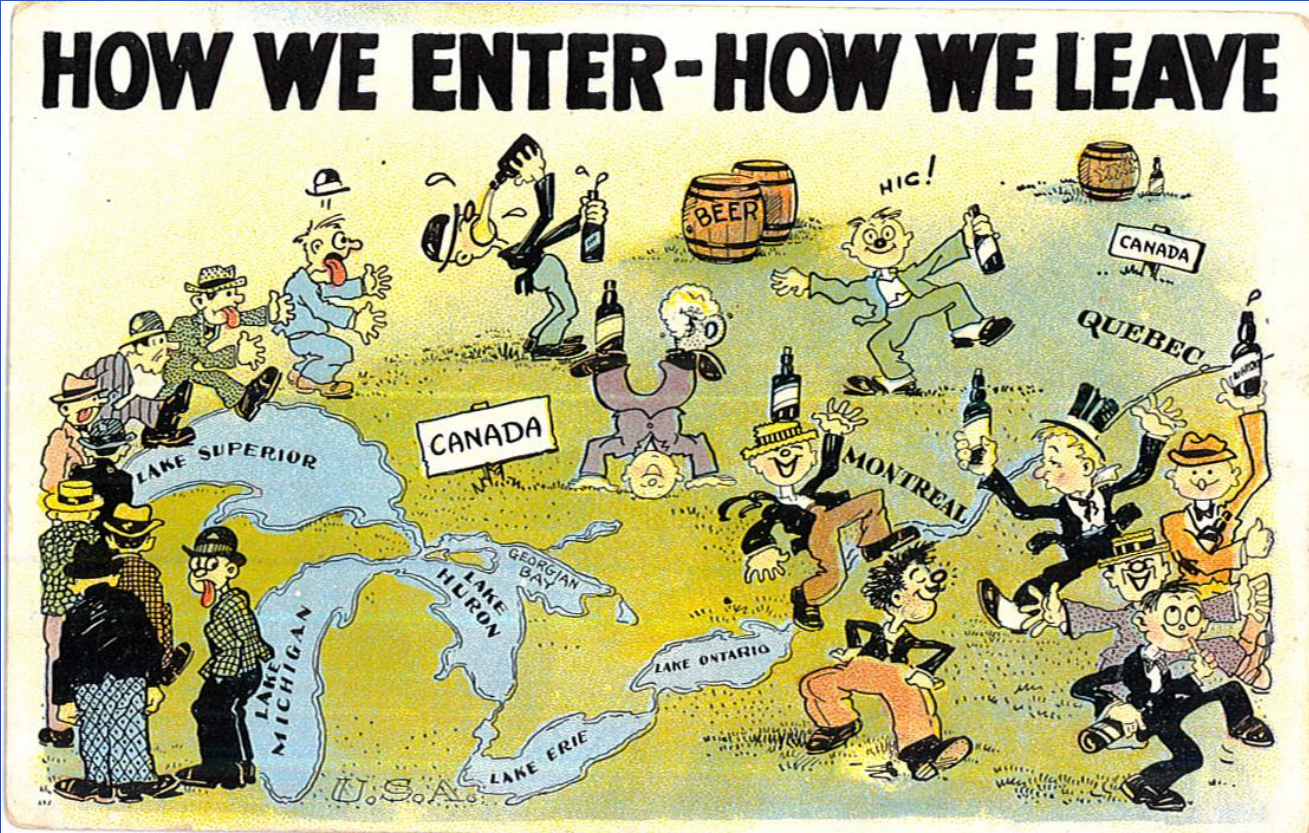
- Hazekamp, A., & Fishedick, J. T. (2012). Cannabis - from cultivar to chemovar. *Drug Testing and Analysis*, 4(7-8), 660–667

Chemical profiles of cultivars – Clusters of 28 tested components: 2 Coffee Shop varieties, 3 pharmaceutical



- Hazekamp, A., & Fishedick, J. T. (2012). Cannabis - from cultivar to chemovar. *Drug Testing and Analysis*, 4(7-8), 660–667

Standardization of Policy: Border Towns



If you want to start taking action, know the players

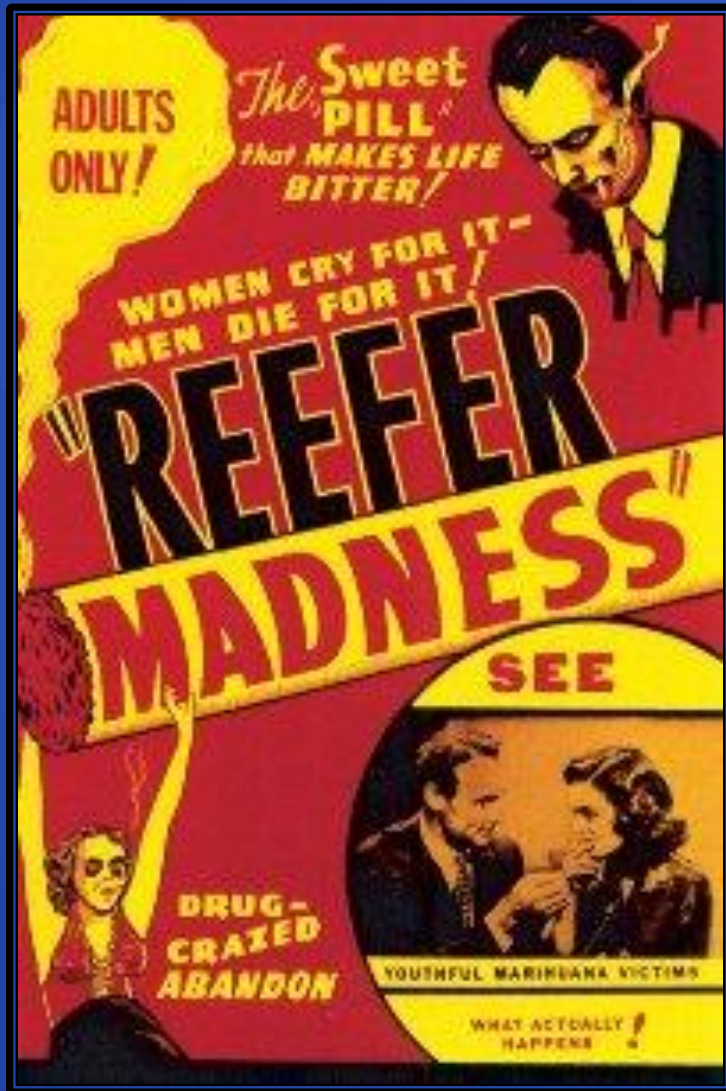
- Politicians – Unpredictable
- Activists – Mostly *Pro*-side with money and clear objectives
- Business interests – Growing stronger every day
- Enforcement – Mixed objectives and interests
- Public Health – Struggling to be heard and sometimes actively marginalized

How does this changing environment affect prevention?

- Removes the legal argument against use
- Possibly also removes public support for prevention
- Exposes holes in research
- Changes perception of harms
- Changes paths to treatment

Question Break

Reefer Madness



The ghost of this movie still haunts the way health messages are heard regarding marijuana.

Fallback arguments may be counterproductive:

- Data-less statements
 - Smoking analogies
 - THC Levels
 - Chemical Soup
 - Gateway drug
- Style points: Smirks, jokes and air-quotes

Smoking anything must be bad

- Actually...Conflicting Evidence
 - Harms
 - Benign or Benefits
 - Definitions of use

THC Levels: It's not your parent's marijuana

- First...Is it true that THC levels are up?
 - Yes, and “Sort of”
- Is THC the only factor?
 - No, there are countervailing cannabinoids (such as CBD) and proportion may be more critical
- Is it more worse?
 - See smoking concerns – be consistent
 - Overdose unlikely
 - Blood level THC curve not like alcohol
- What about synthetics, aren't they stronger too?
 - Yes but they are very different chemicals than THC with a different binding affinity to CB₁ receptor and lack CBD and other possible countervailing cannabinoids

THC in the Blood

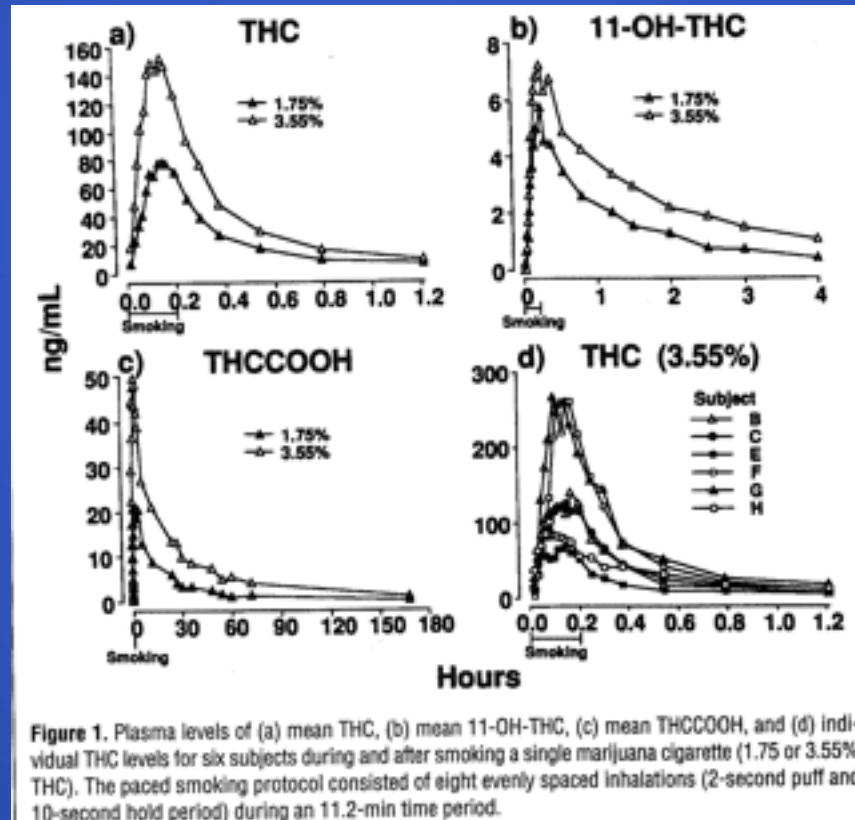


Figure 1. Plasma levels of (a) mean THC, (b) mean 11-OH-THC, (c) mean THCCOOH, and (d) individual THC levels for six subjects during and after smoking a single marijuana cigarette (1.75 or 3.55% THC). The paced smoking protocol consisted of eight evenly spaced inhalations (2-second puff and 10-second hold period) during an 11.2-min time period.

Huestis, M A, J E Henningfield, and E J Cone. "Blood Cannabinoids. I. Absorption of THC and Formation of 11-OH-THC and THCCOOH During and After Smoking Marijuana." *Journal Of Analytical Toxicology* 16, no. 5 (October 1992): 276–282.

Chemical Soup

- There are XXXX hundred chemicals in marijuana smoke...
 - So? Some may be harmful, but are they in dangerous quantities; has research demonstrated negative effects? Finish the link to health effects.
 - How many chemicals are there in a cheeseburger?
 - Is alcohol better for you because it's just one chemical?
- We must avoid blatantly argumentative approaches because they just generate counter arguments; some of which are not easily rebutted from research.

Style

- I've been accused of smirking when I say "medical"
- Remember that students are on guard to rebut any attempt to dissuade use. They'll see *Reefer Madness* hidden behind any negative health claim.

So what should we worry about?

- If not long-term cancer and lung health, then what?
- There are immediate and near-term risks to marijuana.
 - As with almost everything, risk is related to *manner* and *context* of use.
 - Other than DSM-type problems, most of the immediate harms are associated with the impairing qualities of the drug.

Manner – Research is both limited and inconsistent

- Issues of quantity and frequency
- Mode of THC administration
 - Hash
 - Hash Oil
 - Blunts
 - Straight Smoke
 - Vaporizers
 - Eating

Context

- Individual Context:
 - Dependence Risk
 - Other health/mental health concerns
 - Other drug/alcohol use
 - Age
 - Use reasons
- Environmental Context
 - Work/School requirements
 - Social setting
 - Impairment risks

Mixing with Alcohol

- Even very low levels of each can cause dramatic increases in impairment.
- THC level beginning to show impairment was 5 ng/mL dropped to 2.3 ng/mL when any alcohol was present.
- Grotenhermen et al. (2007) note that cannabis impaired automatic functions, while alcohol impaired cognitive functions. Thus the compensatory ability of marijuana users is impaired by even small amounts of alcohol.

Hear about this one?: Myths on Campus

Medical Marijuana Use Reduces Traffic Deaths, Acts As Substitute For Alcohol Consumption, Study Says



First Posted: 11/30/11 04:07 PM ET (Updated: 12/1/11 01:17 PM ET)

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A good deal of time, money, and energy has been spent on the issue of drinking and driving. For all the

It looks like good science: But it's not!

estimating a model that includes both state and year fixed effects. Specifically, the baseline estimating equation is:

$$(1) \quad \ln(\text{Fatalities Total}_{st}) = \beta_0 + \beta_1 \text{MML}_{st} + \mathbf{X}_{st} \boldsymbol{\beta}_2 + v_s + w_t + \varepsilon_{st}$$

where s indexes states and t indexes years.²¹ The variable MML_{st} indicates whether a MML was in effect in state s and year t , and β_1 , the coefficient of interest, represents the marginal effect of legalizing medical marijuana. In alternative specifications we replace $\text{Fatalities Total}_{st}$ with the remaining dependent variables listed in Table 5.

Roadside Breath and Saliva Survey of Weekend Drivers in CA (N=1,314)

Lacey, John, Tara Kelley-Baker, Edmund Romano, Katharine Brainard, and Anthony Ramirez. *Results of the 2012 California Roadside Survey of Nighttime Weekend Drivers' Alcohol and Drug Use*. Calverton, MD: Pacific Institute for Research and Evaluation, November 13, 2012. http://www.ots.ca.gov/Media_and_Research/Data_and_Statistics.asp.

1. Drug-positive drivers made up about 1 in 7 drivers, a third of those drivers tested positive for more than one drug.
2. The percent of drivers testing positive for marijuana (7.4%) was almost identical to the percent testing positive for alcohol (7.3%).
3. About a quarter of marijuana-positive drivers also tested positive for another drug; about 13.3% marijuana-positive were also positive for alcohol.
4. Of those who admitted to having used marijuana more than once, only 22.4% said it had an effect on their driving; and third of those believed it *improved* their driving. **Thus, only 11% of the marijuana-experienced drivers believed it harmed their driving.** 14.3% admitted to having driven within 2 hours of using marijuana in the past year.
5. There were more drivers (2.2% of the sample) who admitted to taking medication that they think affected their driving than there were drivers who tested at or above .08 BAC (1% of drivers).
6. Of those who had recently used marijuana, about two-thirds reported smoking every day.
7. 3.7% of drivers had a medical marijuana permit and most of those drivers (65.8%) had used their permit to buy marijuana.

Recommendations for Driving

- *Still very much an open question:*
 - Some advocate zero tolerance
- Others look for an impairment *per se* level
 - *per se* limit set at 7-10 ng/mL. WA has set it at 5 ng/ml. Note that some talk of whole blood, others plasma. All *per se* discussions involve THC.
 - Advise users to wait 3 hours before driving.
 - Drivers should not mix even low amounts of alcohol with cannabis.

Academic Contexts

- Academic harms:
 - Chronic/Heavy (15+ times per month through years 1-4) users were twice as likely to experience an “enrollment gap” compared against minimal users (Arria et al, 2013).
 - Heavy continual use with onset before age-18 possibly linked to IQ decline. (Meier et al, 2012)

Prevention Strategies

- Comprehensive Strategy:
 - Motivational focus
 - Alternative focus
 - Access focus



Access Focused

- Acknowledge DFSCA supremacy
- Most difficult to control in shifting environment.
- Consider advocating for sales and advertising restrictions instead of outright ban of medical marijuana. Search for ways to limit the development of commercial interests
- Community Action:
 - Examples are forming such as www.butwhataboutthechildren.org
 - Conditional Use Permits around campus.
 - Enhanced DUID enforcement efforts.

When should Public Health professionals get involved?

- It's now or never
- Pick your battles
 - Avoid the losing arguments
 - Focus on the harms you want to prevent